



Course Syllabus

FYL: Smart Robot Car Design (1-Credit)

1. Professor:

Yiyan Li: SFH 2755B, yiyanli185@gmail.com, yli@fortlewis.edu

Office Hours: Office hours will be on Microsoft Teams (virtual) for Fall 2020 due to the pandemic (the office area has limited access to students)

The Office hours will be MWF 9 am - 11 am, 8/24/2020 - 11/25/2020. The Microsoft Teams link: [Join Microsoft Teams Meeting](#)

Send me an email if you need to talk to me face-to-face, I'll come out to meet with you if I can.

Time: W 15:35 - 17:35 pm (8/26/2020 - 10/14/2020)

There will be a 10 min break at 16:30 pm.

Location: Sitter Family Hall 760

2. Course Overview

This First Year Launch course covers basic electrical circuit theories, bench top electronics equipment operations, robot card design, and Printed Circuit Board (PCB) design. Topics regarding engineering career development, research and industry resources at Fort Lewis College, and internship opportunities will also be introduced.

3. Course Topics and Schedule. Please visit www.yilectronics.com, under the tag 'Teaching' to find the instructions, homework assignments, and other information.

Weeks	Dates	Lectures
Week 1	Aug 26	Introduction to the Course
Week 2	Sep 2	Voltages and Currents
Week 3	Sep 9	Digital Signals
Week 4	Sep 16	Lab Equipment Operation
Week 5	Sep 23	Robot Car Design
Week 6	Sep 30	Robot Car Design
Week 7	Oct 7	Robot Car Design
Week 8	Oct 14	Robot Car Design

4. Course Learning Outcomes (with associated ABET criteria):

After completing FYL: Smart Robot Car Design students will be able to:

- Understand the operation of the IR transmitters. (1, 2)
- Build a simple circuit on a breadboard (1, 2)
- Design an analog line follower robot car (1, 2)
- Design a PCB for the robot car's circuits. (1, 2)

5. Engineering Program Student Learning Outcomes (ABET criteria)

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural social, environmental, and economic factors.
3. an ability to communicate effectively with a range of audiences.
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Prerequisite

N/A

7. Textbook

No Textbook is required for this class. Visit www.yilectronics.com for tutorials and instructions.

8. Grading, Homework assignments, Quizzes, and Exams

Homework assignments and quizzes 50%, project report 50%.

A: 93-100, A-: 90-92, B+: 87-89, B: 83-86, B-: 80-82, C+: 77-79, C: 73-76, C-: 70-72, D+: 67-69, D: 63-66, D-: 60-62, F: <60

Homework assignments are lab reports that you should upload to the website. (Instructions for how to do this will be available to you).

Quizzes will be done in class. I'll notify you 1 week prior to the day that has a quiz.

There are not exams for this course.

9. Policies

Regularly being tardy for lectures, leaving in the middle of lectures, or earlier from lectures is unacceptable without prior consent of the instructor.

Cheating or plagiarism will result in an automatic F grade in the course (so do your own homework and projects).

****"Fort Lewis College is committed to providing all students a liberal arts education through a personalized learning environment. If you think you have or you do have a documented disability which will need reasonable academic accommodations, and/or if you are a Veteran who may need services, please contact the Disability Services Office, 280 Noble Hall, 970-247-7383, disabilityservices@fortlewis.edu for an appointment as soon as possible."